

CLAIMS

What is claimed is:

1. A method of training a neural network, the method comprising:  
2 creating a model for a desired function as a multi-dimensional function;  
3 determining if the created model fits a simple finite geometry model;  
4 generating a Radon transform to fit the simple finite geometry model;  
5 feeding the desired function through the Radon transform to generate weights; and  
6 training a multilayer perceptron of the neural network using the weights.
- Sub A(b)  
1 2 3
- 1 2. The method of claim 1 wherein the neural network is a first neural network and the  
3 Radon transform is a second neural network so that the first neural network is trained by  
the second neural network.
- 1 3. The method of claim 1 wherein the first neural network and the second neural  
2 network are dual to each other.
- 1 4. A system for training a neural network, the system comprising:  
2 means for creating a model for a desired function as a multi-dimensional function;  
3 means for determining if the created model fits a simple finite geometry model;  
4 means for generating a Radon transform to fit the simple finite geometry model;  
5 means for feeding the desired function through the Radon transform to generate  
6 weights; and  
7 means for training a multilayer perceptron of the neural network using the weights.
- 1 5. A computer readable medium comprising instructions, which when executed on a  
2 processor, perform a method of training a neural network, the method comprising:  
3 creating a model for a desired function as a multi-dimensional function;  
4 determining if the created model fits a simple finite geometry model;  
5 generating a Radon transform to fit the simple finite geometry model;  
6 feeding the desired function through the Radon transform to generate weights; and  
7 training a multilayer perceptron of the neural network using the weights.

1 6. An apparatus for training a first neural network, the apparatus comprising:  
2 a model generator to create a model for a desired function as a multi-dimensional  
3 function;  
4 a decision module to determine if the created model fits a simple finite geometry  
5 model, the decision module coupled to the model generator;  
6 a Radon transform generator to generate a Radon transform to fit the simple finite  
7 geometry model, the Radon transform generator coupled to the decision module;  
8 a feeder to feed the desired function through the Radon transform to generate  
9 weights, the feeder coupled to the decision module; and  
10 a training module to train a multilayer perceptron of the first neural network using  
11 the weights, the training module coupled to the Radon transform generator.

1 7. The apparatus of claim 6 wherein the Radon transform comprises a second neural  
2 network such that the second neural network is used to train the first neural network.

1 8. The apparatus of claim 7 wherein the first neural network and the second neural  
2 network are dual to each other.